

*Revised per Rick Muller's Comments
Abbreviated for 10 minute talk
2/28/02*

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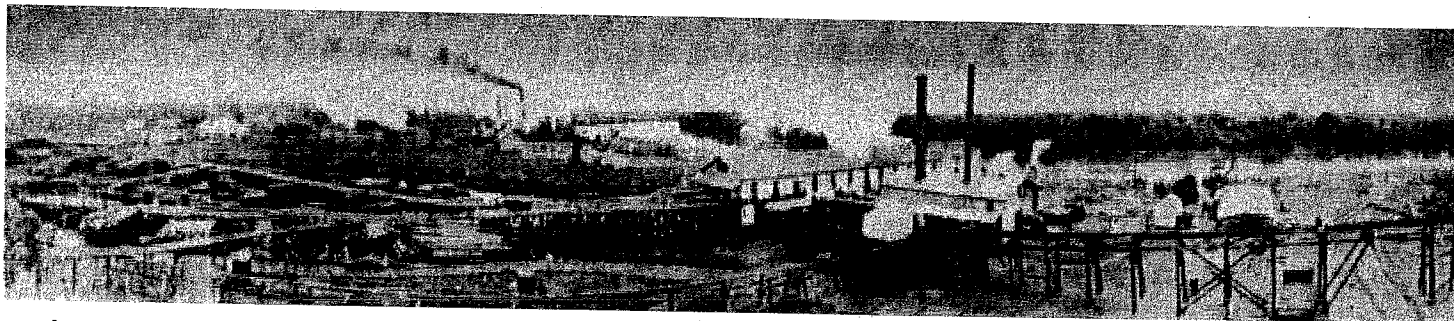
Use of IKONOS Data for Mapping Cultural Resources of Stennis Space Center, Mississippi

Joseph P. Spruce

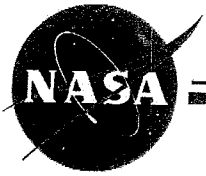
Lockheed Martin Space Operations - Stennis Programs

Dr. Marco Giardino

Earth Science Applications Directorate, Stennis Space Center



Logtown, Mississippi - now abandoned and part of Stennis Space Center



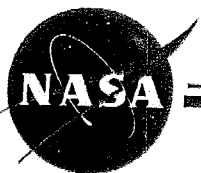
Why Cultural Resource Surveys?

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- Federal Law Compliance

Examples:

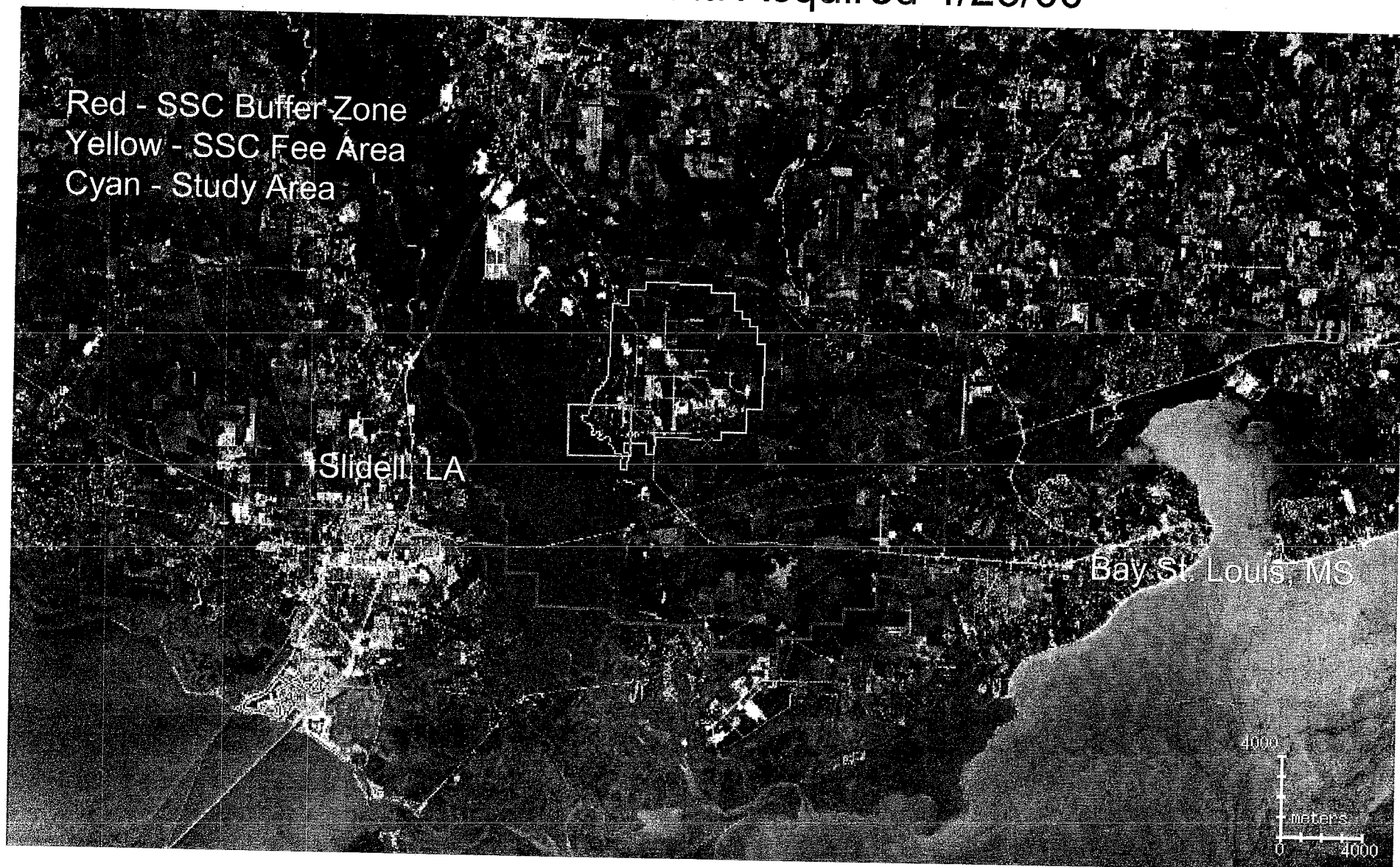
- Section 106 of National Historic Preservation Act of 1966 (16 USC 470) requires surveys for all federally funded land-development projects.
- Native American Graves Protection and Repatriation Act of 1990 – one of many federal resource protection acts.
- State Law Compliance

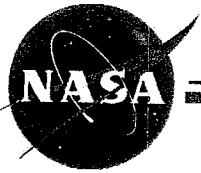


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Landsat ETM Data Acquired 4/26/00

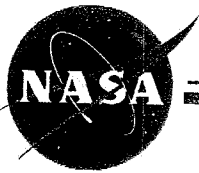




Gainesville Project Background

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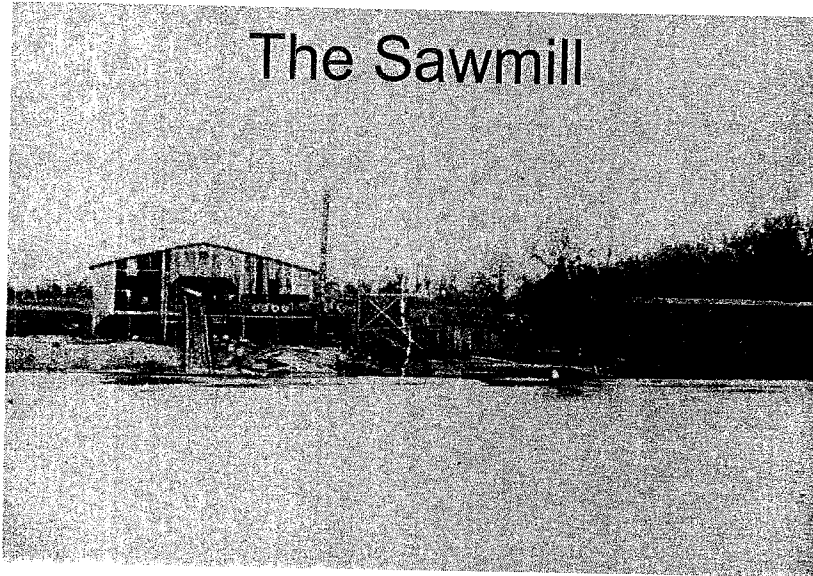
- Project is part of NASA SSC work request to develop RS applications for cultural resource management.
- Main goal - research, develop, and validate RS/GIS methods for aiding cultural resource assessments within SSC.
- Initial objective - georeference historic imagery and map data to aid archaeological RS, field surveys, and excavations.
- Second objective - apply RS techniques to map indicators of historic and prehistoric human occupation.



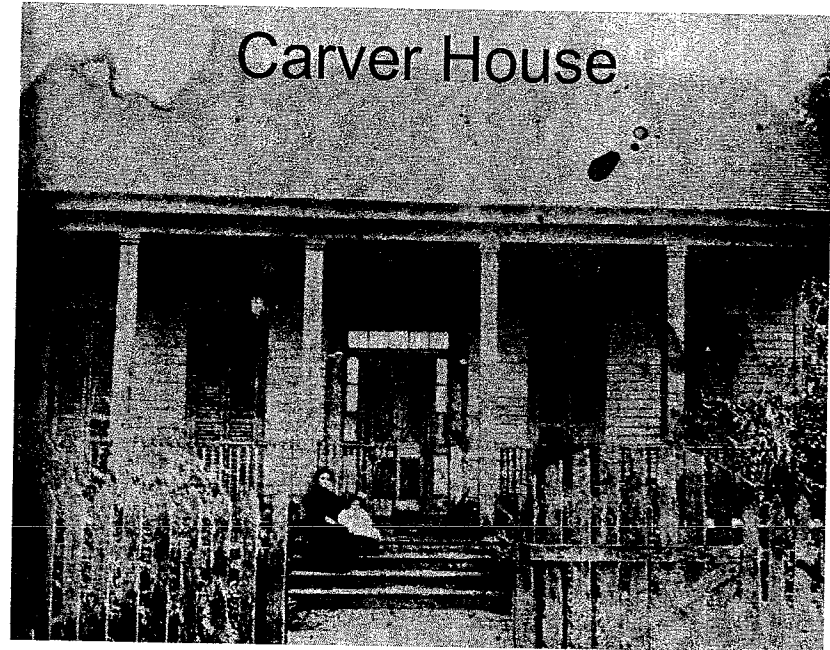
Historic Properties of Gainesville

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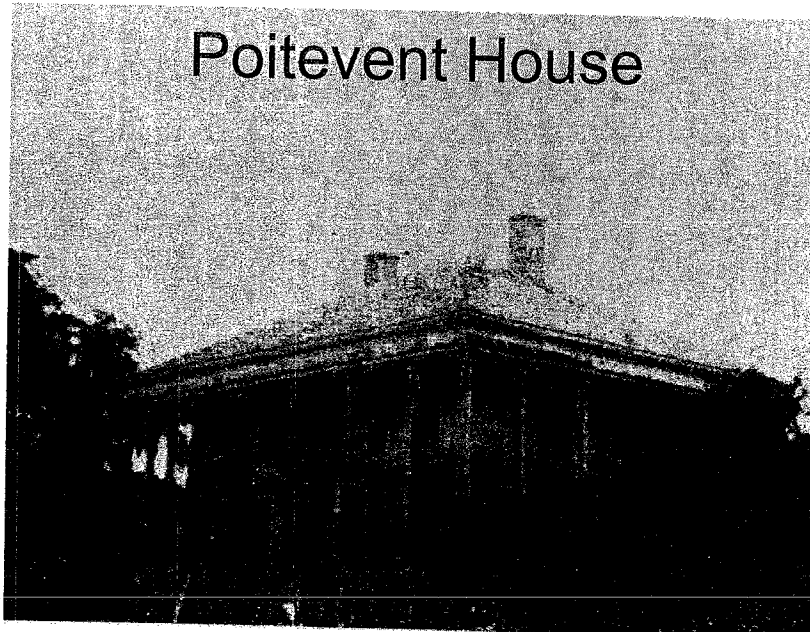
The Sawmill



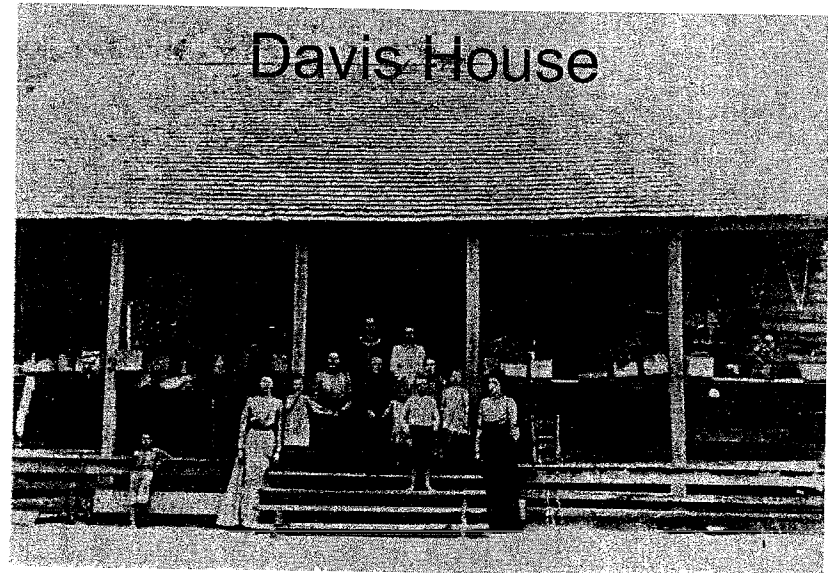
Carver House



Poitevent House



Davis House

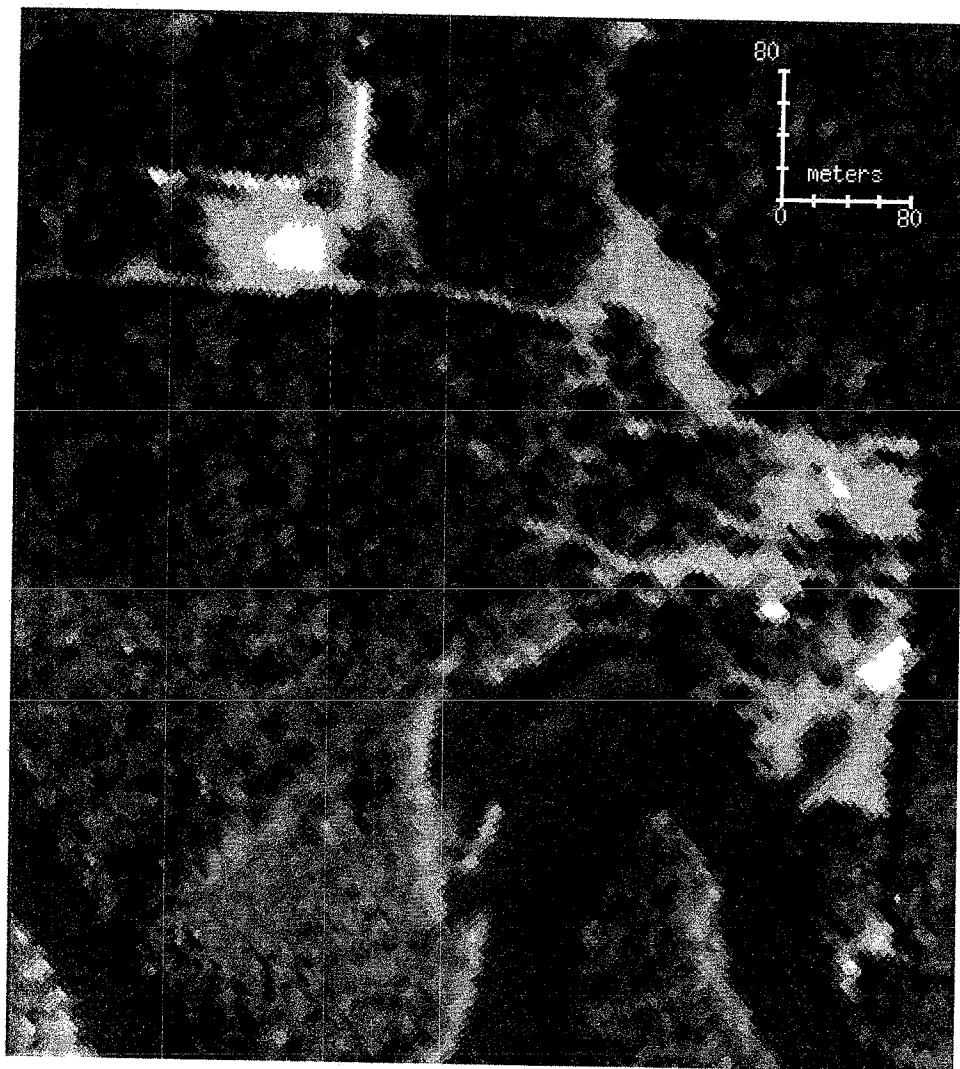




IKONOS View of Gainesville

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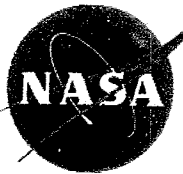
Is IKONOS data suitable for georeferencing scanned historic maps?



4-Meter MS Data, 11/11/99

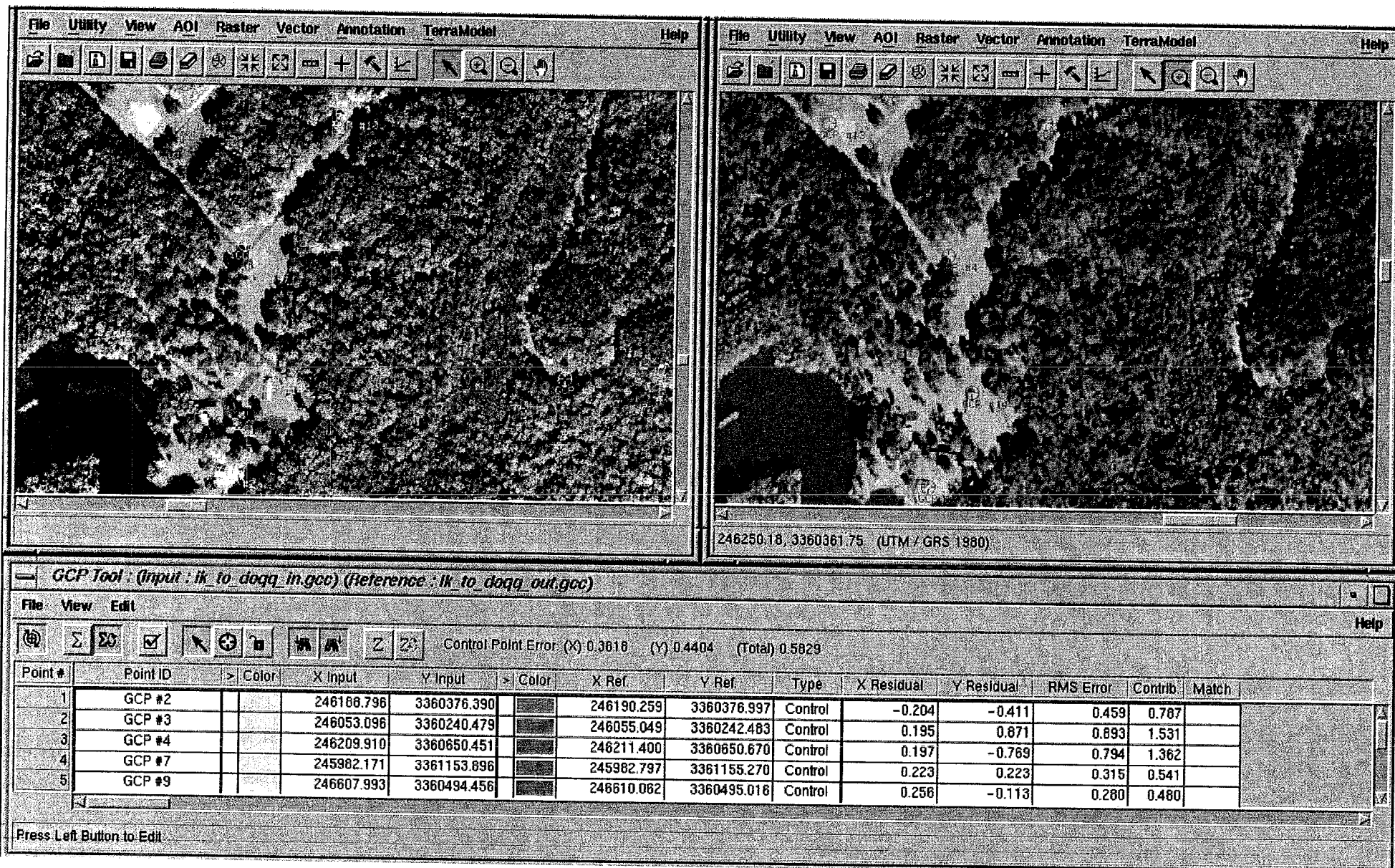


1-Meter Panchromatic Data, 11/11/99



"Orthorectified" IKONOS vs. DOQQ

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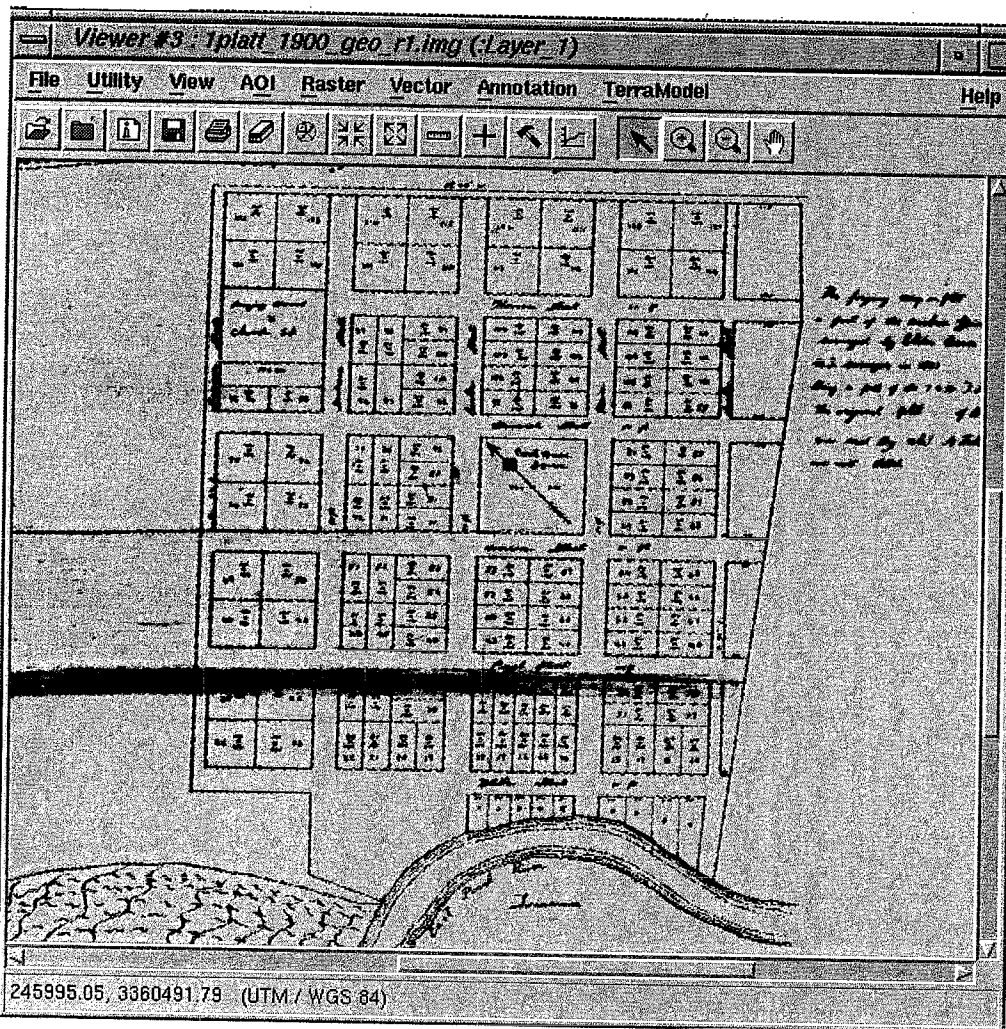


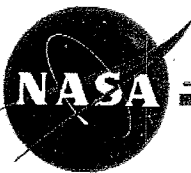


Extracting GIS Layers

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Streets and Parcels from 1900 and 1837 Plats





GIS Layers, Previous CRM Survey

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Mapping Buildings from B/W Aerial

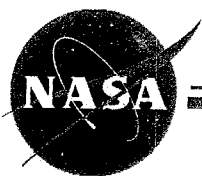
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IKONOS CIR

B/W Aerial Pre-Stennis



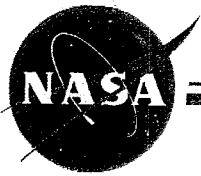
Green - Building Locations



GRID for Archaeological Surveys

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Conclusions

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- IKONOS imagery was effective in coregistering digital historic aerial photography and maps of SSC.
- IKONOS was useful for planning archaeological surveys.
- IKONOS imagery may be used to detect and map “domesticated” vegetation associated with human occupation at Gainesville.

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